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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,133	11/26/2001	Yasuhiro Kinoshita	M 6830 PCT/US	2321

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EXAMINER	
FEELY, MICHAEL J	
ART UNIT	**PAPER NUMBER**
1712	

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/869,133	KINOSHITA ET AL.	
	Examiner	Art Unit	
	Michael J Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☒ Interview Summary (PTO-413) Paper No(s). *1103*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. The objection to claims 19-21 has been overcome by amendment.

Claim Rejections - 35 USC § 102/103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The rejection of claims 1-14 and 18-21 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Katsumi et al. (JP 08-258214) has been withdrawn.

4. The rejection of claims 1-21 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Morita et al. (JP 06-145559) has been withdrawn.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 1 and 19 recite the limitation "the content of nitrogen participating in an isocyanate reaction" and "the ratio of the nitrogen in urea bonds to the nitrogen participating in the isocyanate reaction" in the water-based urethane resin (a). There is insufficient antecedent basis for these limitations in the claim.

Claims 2-18 are rejected because they are dependent from claim 1, and claims 20-21 are rejected because they are dependent from claim 19.

Both claims 1 and 19 are drawn to a water-based surface treatment composition comprising components (a) through (d), wherein component (a) is a water-based urethane resin. The urethane resin is limited by:

1) average molecular weight,

2) a resin skeleton comprising a bisphenol skeleton and at least one carboxyl group,

3) nitrogen content "participating in an isocyanate reaction," and

4) ratio of nitrogen in urea bonds to the nitrogen "participating in an isocyanate reaction". Limitations 3) and 4) are introduced with no prior mention of an isocyanate reaction or the presence of urea bonds. Because of this, it is unclear how these limitations exactly define component (a).

Urea bonds:

Based on the specification *(see the paragraph bridging pages 5 and 6)*, urea bonds are introduced to the urethane skeleton at some stage of the urethane resin synthesis. This is also true for the introduction of carboxyl groups to the resin skeleton. Therefore, it is believed that the resin skeleton should be described as one:

--comprising a bisphenol skeleton, at least one carboxyl group, and urea bonds--.

In addition, the clarity of the claim could be improved by including a broad description of the urethane resin synthesis. The following language is suggested:

--wherein synthesis of said water-based urethane resin comprises: an isocyanate reaction with a polyol to form a resin skeleton, wherein at least a portion of said polyol has a

bisphenol skeleton; introduction of at least one carboxyl group to the resin skeleton; and introduction of urea bonds to the resin skeleton.--

This language is supported by the specification:

a) *an isocyanate reaction with a polyol to form a resin skeleton, wherein at least a portion of said polyol has a bisphenol skeleton* {support in first three full paragraphs of page 4, first full paragraph of page 5};

b) *introduction of at least one carboxyl group to the resin skeleton* {support in paragraph bridging pages 4 and 5}; and

c) *introduction of urea bonds to the resin skeleton* {support in paragraph bridging pages 5 and 6}.

Nitrogen content:

Based upon the specification *(see first full paragraph of page 5 and "*1" on page 12)*, it appears that this nitrogen content is the nitrogen content of the overall urethane resin, based on only the nitrogen atoms that participated the isocyanate reaction, i.e. excluding nitrogen provided by the introduction of urea bonds. Hence, the following language has been inserted to clarify the nitrogen content limitation:

--wherein the nitrogen content of the water-based urethane is based on nitrogen atoms that participated in the isocyanate reaction--.

Proportion of nitrogen atoms present in urea bonds:

Based on the specification *(see paragraph bridging pages 5 and 6)*, the following language would provide improved clarity for this limitation:

--wherein the proportion of nitrogen atoms present in urea bonds to nitrogen atoms that participated in the isocyanate reaction--.

Claim Language Suggestions

8. The following are suggested changes for the instant claims:

1. (Amended) A water-based metal surface treatment composition for forming a lubricating film with excellent marring resistance comprising:

(a) a water-based urethane resin having:

an average molecular weight of at least 3000,

a resin skeleton comprising a bisphenol skeleton, at least one carboxyl group, and urea bonds, and

a nitrogen content between 2 and 13 wt%;

wherein synthesis of said water-based urethane resin comprises:

an isocyanate reaction with a polyol to form a resin skeleton, wherein at least a portion of said polyol has a bisphenol skeleton,

introduction of at least one carboxyl group to the resin skeleton, and

introduction of urea bonds to the resin skeleton;

wherein the nitrogen content of the water-based urethane is based on nitrogen atoms that participated in the isocyanate reaction; and

wherein the proportion of nitrogen atoms present in urea bonds to nitrogen atoms that participated in the isocyanate reaction is between 10/100 and 90/100;

(b) a hardener;

(c) silica; and

(d) a polyolefin wax;

wherein the combined amount of components (a) and (b), as solids with respect to the total solid weight (e), is 50 to 95 wt%, the equivalent ratio of functional groups in component (b) with respect to equivalents of carboxyl groups contained in the resin skeleton of component (a) is 0.10 to 1.00, the solid weight of component (c) with respect to (e) is 3 to 40 wt%, and the solid weight of component (d) with respect to (e) is 2 to 30 wt%.

2. The water-based metal surface treatment composition of claim 1, wherein the nitrogen content of the water-based urethane resin is 5 to 10 wt%.

Claims 3-6: Change "A water-based metal surface treatment composition" to --The water-based metal surface treatment composition--.

7. The water-based metal surface treatment composition of claim 1, wherein the proportion of nitrogen atoms present in urea bonds to nitrogen atoms that participated in the isocyanate reaction is between 40/100 and 80/100.

Claims 8-12: Change "A water-based metal surface treatment composition" to --The water-based metal surface treatment composition--.

19. A water-based metal surface treatment composition for forming a lubricating film with excellent marring resistance comprising:

(a) a water-based urethane resin having:

an average molecular weight of at least 3000,

a resin skeleton comprising a bisphenol skeleton, at least one carboxyl group, and urea bonds, and

a nitrogen content between 5 and 10 wt%;

wherein synthesis of said water-based urethane resin comprises:

an isocyanate reaction with a polyol to form a resin skeleton, wherein at least a portion of said polyol has a bisphenol skeleton,

introduction of at least one carboxyl group to the resin skeleton, and

introduction of urea bonds to the resin skeleton;

wherein the nitrogen content of the water-based urethane is based on nitrogen atoms that participated in the isocyanate reaction; and

wherein the proportion of nitrogen atoms present in urea bonds to nitrogen atoms that participated in the isocyanate reaction is between 40/100 and 80/100;

(b) a hardener comprising at least one type of functional group selected from the group consisting of epoxy groups and isocyanate groups;

(c) silica having a particle size of 3 to 30 nm; and

(d) a polyolefin wax having a branched structure, an average particle size of 0.1 to 7.0 μm, and a saponification value of zero to 30;

wherein the combined amount of components (a) and (b), as solids with respect to the total solid weight (e), is 55 to 75 wt%, the equivalent ratio of functional groups in component (b) with respect to equivalents of carboxyl groups contained in the resin skeleton of component (a) is 0.30 to 1.00, the solid weight of component (c) with respect to (e) is 10 to 30 wt%, and the solid weight of component (d) with respect to (e) is 10 to 25 wt%.

Allowable Subject Matter

9. Claims 1-21 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest the invention set forth in independent claims 1 and 19. The closest prior art is Katsumi et al. (JP 08-258214) and Morita et al. (JP 06-145559).

Both references teach water-based surface treatment compositions comprising a) a water-based urethane resin, b) a hardener, c) silica, and d) a polyolefin wax. However, neither reference teaches the specifics of the water-based urethane used in the instant invention. Both references use a urethane resin that features a bisphenol skeleton and carboxyl groups, but neither reference indicates the presence of urea groups. Hence, neither reference indicates a proportion of nitrogen present in urea groups with respect to nitrogen that were introduced during the isocyanate reaction with the polyol to form the urethane linkages.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J. Feely
Patent Examiner
Art Unit 1712

November 17, 2003